THE Cambridge Scientific Instrument Company have published a descriptive list of "anthropometric apparatus," consisting of instruments for measuring and testing the chief physical characteristics of the human body. This list cancels those previously issued. The instruments have been designed under the direction of Mr. Francis Galton.

A BIOLOGICAL and Microscopical Section has been formed in connection with the Cardiff Naturalists' Society, with Dr. C. T. Vachell, M.D., as President, and Prof. W. N. Parker as Hon. Sec. The inaugural meeting was held on Thursday evening, October 20, in the Biological Department of the University College, when papers were read on the work of the Section by the President and Hon. Sec. The objects of the Section are stated to be the promotion of the study of biology generally, but more especially of the local flora and fauna, including marine as well as land forms.

IT is announced that the following lectures will be delivered at the Royal Victoria Hall, Waterloo Bridge Road. November 1, Mr. A. H. Gilkes, "The First Napoleon;" 8th, Mr. W. L. Carpenter, "Heat" (experiments by means of the projection lantern); 15th, Dr. H. W. Crosskey, "Early Changes in the Earth's Surface and how we get our Knowledge of them;" 22nd, Sir John Lubbock, M.P., "The Habits and Ideas of Savages;" 29th, Mr. W. F. Donkin, "Mountain Climbing in Switzerland and the Caucasus;" December 6, Prof. Boyd Dawkins, F.R.S., "A Bit of Coal;" 13th, Dr. W. D. Halliburton, "The Eye, and how we See."

THE additions to the Zoological Society's Gardens during the past week include two Nisnas Monkeys (*Cercopithecus pyrrhonotus*) from West Africa, presented by Mrs. Benett Stanford; a Brown Capuchin (*Cebus fatuellus*) from Guiana, presented by Mr. Edward A. B. Pitman; a Dusky Ichneumon (*Herpestes pulverulentus*) from South Africa, presented by Mr. L. G. Morrell; a Three-striped Paradoxure (*Paradoxurus trivirgatus*) from India, presented by Mr. J. Millar; a Buzzard (*Buteo vulgaris*), British, presented by Mr. F. Austen; a Pennant's Broadtail (*Platycercus pennanti*) from New South Wales, presented by Mrs. Brooks; a Common Chameleon (*Chamæleon vulgaris*) from North Africa, presented by Mr. Absell; two Burrowing Owls (*Speotyto cunicularia*) from South America, presented by Mr. John Clarke Hawkshawe, F.Z.S.

OUR ASTRONOMICAL COLUMN.

THE PARALLAX OF Σ 2398.—In the *Astronomische Nachrichten*, No. 2676, Dr. E. Lamp, of Kiel, has published a determination of the parallax of the brighter component of this pair (to which his attention was attracted by their large proper motion) referred to two neighbouring stars derived from a series of differences of declination observed with the refractor and filar micrometer of the Kiel Observatory between February 1883 and April 1885; the value of the parallax deduced from this discussion being 0″·34. Wishing to verify this result, Dr. Lamp has made with the same instrument, between May 1885 and March 1887, a further series of measures of differences of declination of each component of Σ 2398 (= D.M. + 59°, No. 1915, mags. 8·2 and 9·0 respectively) referred to three comparison-stars: viz. D.M. + 59°, No. 1911, mag. 7·0; D.M. + 59°, No. 1913, mag. 9·4; and D.M. + 59°, No. 1918, mag. 7·8; and has published the results of his discussion of these measures in Nos. 2807–8 of the above-mentioned periodical. The following tabular statement gives for each series of observations the resulting parallax deduced from the differences of declination between each component of the double star and each of the above-mentioned comparison-stars:—

Period.	Component.	π_1	π_2	π_3	No. of Measures.
		″	″		
1883–84 ...	Σ_1 ...	— ...	+0·2958 ...	+0·3801	46
1884–85 ...	Σ_1 ...	— ...	+0·2517 ...	+0·4628	44
1885–87 ...	Σ_1 ...	+0·3601 ...	+0·2656 ...	+0·4303	73
1885–87 ...	Σ_2 ...	+0·3808 ...	+0·2636 ...	+0·4199	73

It would appear from this that Comparison-star No. 2 has a sensible parallax relative to Comparison-stars Nos. 1 and 3, and we hope that Dr. Lamp will proceed to investigate it independently. Meanwhile, combining the results obtained from the three stars, the mean parallax is—

for Σ_1 = 0″·3520 ± 0″·0140
and for Σ_2 = 0″·3548 ± 0″·0131,

or the mean parallax of the system Σ 2398 = 0″·353 ± 0″·014.

NEW MINOR PLANET.—A new minor planet, No. 271, was discovered on October 13 by Dr. Knorre, of Berlin.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1887 OCTOBER 30—NOVEMBER 5.

(FOR the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on October 30

Sun rises, 6h. 52m.; souths, 11h. 43m. 46·2s.; sets, 16h. 36m.: right asc. on meridian, 14h. 17·7m.; decl. 13° 47′ S. Sidereal Time at Sunset, 19h. 11m.

Moon (Full on October 31, 22h.) rises, 16h. 38m.; souths, 23h. 12m.; sets, 5h. 58m.*: right asc. on meridian, 1h. 47·3m.; decl. 6° 0′ N.

Planet.	Rises. h. m.	Souths. h. m.	Sets. h. m.	Right asc. and declination on meridian. h. m.	° ′
Mercury.	9 21 ...	13 16 ...	17 11 ...	15 49·9 ...	23 5 S.
Venus ...	3 2 ...	9 8 ...	15 14 ...	11 41·4 ...	0 23 N.
Mars ...	1 21 ...	8 13 ...	15 5 ...	10 46·2 ...	9 29 N.
Jupiter ...	7 31 ...	12 14 ...	16 57 ...	14 48·3 ...	15 17 S.
Saturn ...	22 15*...	6 2 ...	13 49 ...	8 34·7 ...	19 2 N.
Uranus...	4 42 ...	10 20 ...	15 58 ...	12 53·9 ...	5 5 S.
Neptune.	17 36*...	1 18 ...	9 0 ...	3 49·8 ...	18 18 N.

* Indicates that the rising is that of the preceding evening and the setting that of the following morning.

Occultations of Stars by the Moon (visible at Greenwich).

Oct.	Star.	Mag.	Disap. h. m.	Reap. h. m.	Corresponding angles from vertex to right for inverted image. ° °
30 ...	33 Ceti ...	... 6 ...	0 58 ...	1 44 ...	193 275
30 ...	35 Ceti ...	... 6½ ...	1 54 ...	3 3 ...	149 325
Nov.					
1 ...	μ Ceti ...	... 4 ...	2 34 ...	3 38 ...	109 355
3 ...	B.A.C. 1351	... 6½ ...	4 19 ...	4 30 ...	217 235
3 ...	75 Tauri ...	... 6 ...	6 41 ...	7 21 ...	89 5

Variable Stars.

Star.	R.A. h. m.	Decl. ° ′		h. m.	
U Cephei	0 52·3 ...	81 16 N. ..	Nov. 2,	3 10	*m*
o Ceti	2 13·6 ...	3 29 S. ...	,, 5,		*M*
T Arietis	2 42·0 ...	17 2 N. ...	,, 4,		*m*
η Geminorum ...	6 8·1 ...	22 32 N. ...	Oct. 30,		*M*
ζ Geminorum ...	6 57·4 ...	20 44 N. ...	,, 30,	4 0	*m*
			Nov. 3,	4 0	*M*
U Hydræ	10 32·0 ...	12 48 S. ...	,, 3,		*m*
S Coronæ	15 16·8 ...	31 47 N. ...	,, 3,		*m*
V Ophiuchi	16 20·5 ...	12 10 S. ...	Oct. 31,		*M*
W Herculis	16 31·2 ...	37 34 N. ...	Nov. 4,		*m*
U Ophiuchi	17 10·8 ...	1 20 N. ...	,, 2,	2 23	*m*
		and at intervals of		20 8	
β Lyræ...	18 45·9 ...	33 14 N. ...	Nov. 2,	22 0	m_2
η Aquilæ	19 46·7 ...	0 43 N. ...	,, 1,	0 0	*m*
W Cygni	21 31·8 ...	44 52 N. ...	,, 1,		*m*
δ Cephei	22 25·0 ...	57 50 N. ...	,, 3,	3 0	*m*

M signifies maximum; *m* minimum; m_2 secondary minimum.

GEOGRAPHICAL NOTES.

LIEUT. WISSMANN, the well-known African explorer, has arrived at Brussels from his journey across Africa. He was accompanied as far as Nyangwé by Lieut. Le Marinel, the route followed being different from that traversed by Wissmann on his first journey. He did not, however, succeed in penetrating the region to the north of the Sankuru, nor in reaching the somewhat mysterious Lake Lundi.

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In the *Bulletin* of the Hungarian Geographical Society, vol. xv. fasc. 7, will be found an interesting paper (abstracted in French) on the struggle for existence among plants in the Hungarian Pusztas (steppes).

To the *Bulletin* of the Belgian Geographical Society, No. 4, 1887, M. Louis Navez contributes an instructive paper on the influence of the various geological formations in Belgium, especially upon the people. M. Navez points out that Belgium is specially favourable for such an investigation. In France and Germany the great differences of altitude and latitude, and the diversity of climate, determine phenomena often difficult to distinguish from those which are really due to geology, and are therefore causes of error. In Belgium the differences of altitude, of latitude, and of climate are not of so much importance. The influence of the character of the soil is almost always preponderant, and is easily distinguished. One instance may be given. The great quantity of lime which the Cretaceous soil of the Geer valley contains gives to the straw of the cereals a special suppleness, strength, and whiteness. From this straw are manufactured plaits which have a large sale, and in Paris are ranked next to the straw of Italy for ladies' bonnets. This manufacture is worth from four to five million francs yearly. On the other hand, the absence of calcareous salts in the ground traversed by the feeders of the Lys, render that river eminently suited for the cleansing of flax; hence the fame of the cloths of Flanders. M. Navez believes that the facts he brings together prove that the geological construction of the ground is one of the factors that limit the free will of man and have an active influence on communities.

In Dr. Oscar Baumann's paper on Fernando Po, in No. ix. of *Petermann's Mitteilungen*, the author states that the volcanic group of which the island is a member, forms a line running south-west from the Cameroons, and may be regarded as the result of an eruptive fissure, which on the one side extends from the Cameroons to the island of Annobon, and on the other appears to find in the Rumbi Mountains a continuation into the heart of Africa. The northern half of the island is covered almost entirely by the huge volcanic peak of O-Wassa (Clarence Peak). After careful estimation he gives the summit a height of 9350 feet. The volcano may be regarded as extinct, the fire and clouds of smoke seen at times on the summit being easily explained by the annual burning of the grass. The crater on the top of the mountain is 515 feet in depth, and is inclosed by gray disintegrated walls of basalt. On the thickly wooded and almost impassable slopes are many subsidiary craters. The basaltic rock of the east coast is being gradually crumbled away by the sea, while along the west coast the land is gaining on the sea. The physical geography of the southern half of the island is determined by the mountain range of the "Cordillera of Fernando Po," which in two chains connected by a pass runs practically east and west. These chains culminate in several summits, which have a volcanic character only on account of their basaltic composition. In the south of the island, and apparently quite independent of the Cordillera, there rises a lofty volcanic mass. On the top of one cone-shaped peak, precipitous on all sides, there extends a flat basin surrounded by a circle of hills. This the author supposes to be the remains of a large crater.

M. A. J. Wauters writes a long article in the new number of the *Mouvement Géographique* to prove that Lake Muta-Nzigé, the somewhat problematical lake to the south of Albert Nyanza, belongs to the Congo system, and not to that of the Nile. The altitudes and other data which M. Wauters has on which to base his conjecture are of the scantiest, and extremely doubtful. It seems to us that such conjectural arm-chair geography is a useless waste of time and space. The question of the relation between the Muta-Nzigé and the Albert Nyanza can only be solved by actual exploration. By this time no doubt it has been solved either by Emin Pasha or Stanley, and M. Wauters might therefore put the valuable space of his small journal to a much more profitable use.

METEOROLOGICAL NOTES.

The Hydrographer to the Admiralty has issued a circular stating that the United States Government has given notice that from September 1, 1887, the following storm signals (consisting of day signals of two kinds, also night signals), would be shown on the shores of the Atlantic Ocean, Gulf of Mexico, and Great Lakes, as storm conditions may demand, taking into consideration the fact that westerly winds of high velocity with clearing weather are less dangerous than those from easterly quarters with freezing weather: (1) cautionary signal, a *yellow flag with white centre*, will indicate the winds expected are not so severe but that well-found and seaworthy vessels can meet them without great danger; (2) storm signal (now in use), a *red flag with black centre*, will indicate that the storm is expected to be of more marked violence. In order to afford as exact information as possible regarding the relative positions of the storm and the winds expected, two pendants will be displayed: a *red pendant* will indicate easterly winds, from north-east to south inclusive, and that the storm centre is approaching; a *white pendant* will indicate westerly winds, from north to south-west inclusive, and that the storm centre has passed. Whilst it is intended that the pendant shall indicate positively only whether the winds will be easterly or westerly, yet in order to give still more definite information, the *red* or *easterly pendant* will be hoisted above the cautionary or storm signal, for winds from the north-east quadrant, and below for winds from the south-east quadrant. Also, the *white* or *westerly pendant* will be hoisted above the cautionary or storm signal for winds from the north-west quadrant, and below for winds from the south-west quadrant. Because of the difficulty of varying night signals, they will not distinctly show the force, but indicate the direction of the wind only; a *red light* for easterly winds, and a *red and white light* for westerly winds.

The Pilot Chart of the North Atlantic Ocean, issued by the Hydrographic Office at Washington for the month of September, includes a valuable article on the law of storms, considered with special reference to the approaching season of West Indian hurricanes. The article is accompanied by two diagrams illustrating (1) the circulation of the wind in a tropical cyclone in the northern hemisphere, showing clearly how the wind is drawn in towards the centre of low barometer, and its direction at any point; and (2) a diagram for practical use in finding a ship's position relatively to the centre of the hurricane, by means of the direction of the wind and fall of the barometer. The circles in this diagram are normal isobars, and represent the rate at which the barometer falls as the centre of the storm is approached, so far as our latest knowledge of cyclones can be safely used as a general guide. Full directions are given for the practical use of these diagrams. The Pilot Charts contain frequent extracts from ships' logs, as to the great value of the use of oil in heavy seas, and the Hydrographic Office considers that the testimony is so conclusive that its use is now recognized by every commercial nation. The Charts contain information about winds, currents, fog, and the position of dangerous derelicts, and their speedy dissemination must prove to be of great utility to the maritime community generally.

The *Annalen der Hydrographie und maritimen Meteorologie* for August contains a graphical representation of the distribution of rainfall in the Atlantic and Indian Oceans, compiled by Dr. W. Köppen from materials at the disposal of the Deutsche Seewarte and all other available sources. The latitude is shown in the vertical, and the months in the horizontal direction; each point of the area of the diagram therefore indicates a definite time of the year, and a definite distance from the equator, and the curves show the equal percentages of days of rainfall. The diagrams are explained in the text, and show the relatively large rainfall frequency in the higher latitudes of the North Atlantic in all seasons, but especially during winter; further southwards, towards the region of the trade-winds, all months become drier, but north of the tropics rain falls on an average once in every 5–10 days. In the South Atlantic the conditions are more complicated. From 0°–5° S. autumn rains are prevalent, and from 5°–14° S. the winter rainfall maximum is prominent. In the Indian Ocean the equatorial rain-belt is considerably widened, especially on the southern side. From 2° N. to 12° S. the rainfall frequency does not fall below 50 per cent. in any month, and from June to October it exceeds 70 per cent. Between 10° and 12° S., and also from 25°–30° S. the spring-time is driest; while from 33° S. the rainfall increases rapidly in winter and spring. South of 40° S. it rains eight days out of ten during July and August.

Symons's Monthly Meteorological Magazine for September contains interesting articles on the deficiency of rainfall this year and on the definition of drought. From a comparison

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